11-14

Patent Application Transmittal

(only for new nonprovisional applications under 37 C.F.R. 1.53(b))

JC825 U.S. PTO 11/13/00

JC825 U.S. PTO 09/711547 11/13/00

FIRM: BROWN & WOOD LLP
ADDRESS: One World Trade Center
New York, New York 10048-0557
TEL: (212) 839-5300
FAX: (212) 839-5599

EXPRESS MAIL

Mailing label number **EJ 339 399 600 US**
Date of Deposit **November 13, 2000**
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR § 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents and Trademarks, Washington, D.C. 20231.

Arthur Ceppos
(Typed or printed name of person mailing paper or fee)

(Signature of person mailing paper or fee)

[37 CFR § 1.8 Certificate of Mailing CANNOT be used.]

Date: November 13, 2000
Attorney Docket No.: DT-3645

ASSISTANT COMMISSIONER FOR PATENTS
Box Patent Application
Washington, D.C. 20231

Sir:

With reference to the filing in the United States Patent and Trademark Office of an application for patent in the name(s) of: **Peter Fischer**

entitled: **A SCANNING DEVICE FOR A POSITION-MEASURING SYSTEM FOR SCANNING GRADUATION**

X New Application
___ Continuing Application

__ Continuation __ Divisional __ Continuation-in-Part (CIP)
of prior application serial no. , filed .

[Note: If priority under 35 U.S.C. 120 involves a series of respectively copending applications, then in this amendment identify each and its relationship to its immediate predecessor.]

___ The prior application is assigned of record to ___.

___ This is an application of a small entity under 37 CFR 1.9(f) and the amounts shown in parentheses below have been employed in calculating the fee:

___ Small Entity Verified Statement(s) is (are) enclosed.
___ Small Entity Verified Statement(s) filed in prior application, status still proper and desired

Patent Application Transmittal
(only for new nonprovisional applications under 37 C.F.R. 1.53(b))

JC825 U.S. PTO
09/711547
11/13/00

The following are enclosed:

X Specification (**11** pages) & Abstract
X 2 Sheet(s) of Drawings
X 9 Claim(s) (including **1** independent claim(s))
__ This application contains a multiple dependent claim
__ Information Diclosure Statement, PTO-1449 and __ references;

X This filing fee has been calculated on the basis of the claims as amended by any enclosed preliminary amendment as follows:

	Basic Fee, $710.00 ($355.00).....	$ 710.00
	Number of Claims in excess of 20 at $18.00 ($9.00) each:.....	00.00
	Number of Independent Claims in excess of 3 at $80.00 ($40.00) each:.....	00.00
	Multiple Dependent Claim Fee at $270.00 ($135.00).....	00.00
X	Assignment Recording Fee $40.00	40.00
	Total Filing Fee.....	$ 750.00

X The Commissioner is hereby authorized to charge payment of the following fees associated with this communication and credit any overpayment to Deposit Account No. 50-0955. A duplicate copy of this sheet is enclosed

(x) Any additional filing fees required under 37 CRF 1.16
(x) Any patent application processing fees under 37 CRF 1.17.

X Oath or Declaration and Power of Attorney
X New X signed __ unsigned
__ Copy from a prior application (37 C.F.R. 1.63(d))

Deletion of Inventors

__ Signed Statement attached deleting inventor(s) named in the prior application (37 C.F.R. 1.63(d)(2) and 1.33(b))

__ Power of attorney and/or correspondence address was changed during prosecution of the prior application. The new power of attorney is to **, Reg. No.** . The new correspondence address is indicated above.

__ Incorporation by Reference (for continuation or divisional application)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

__ A Preliminary Amendment is enclosed.
(Claims added by this amendment have been properly numbered consecutively beginning with the number next following the highest numbered original claim in the prior application.)

Patent Application Transmittal
(only for new nonprovisional applications under 37 C.F.R. 1.53(b))

— Cancel in this application original claims ___ of the prior application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)

X New formal drawings are enclosed.

X Certified copy of each foreign priority application on which the claim for priority under 35 U.S.C. 119 is based was filed in prior U.S. application serial no. , filed . A list of said foreign priority application(s) is (are) provided below. Acknowledgement thereof is requested.

Application No.	Filed	In
199 57 822.2	**November 19, 1999**	**Germany**

X The Commissioner is hereby authorized to charge payment of the following fees during the pendency of the application or credit any overpayment to Deposit Account No. 50-0955. A duplicate copy of this sheet is enclosed

(X) Any patent application processing fees under 37 CFR 1.17
(X) Any filing fees required under 37 CRF 1.16 for the presentation of extra claims.

Respectfully submitted,

Attorneys for Applicant(s)

By: _____
Ronit Gilon
Reg # 39,202

09/56.P.456

DT-3645

A SCANNING DEVICE FOR A POSITION-MEASURING SYSTEM

FOR SCANNING A SCALE GRADUATION

Copy provided by USPTO

FIELD OF INVENTION

The invention relates to a scanning device for a position-measuring system for scanning a scale graduation comprising a probe connected with the scale graduation and supplied with electric power over electrical connections; an electronic module being electrically coupled to the probe; a housing for shielding the electronic module from the surroundings; and means for limiting the supply of current to the probe when the temperature produced as a result of the current flow exceeds a specific value.

BACKGROUND OF THE INVENTION

The scanning device, in accordance with the invention, comprises a probe that may be brought into operative connection with the scale graduation for ascertaining the positional information contained in the scale graduation; an electronic module being coupled electrically with the probe and evaluating the signals generated by the probe in scanning the scale graduation, and a housing for shielding the module from the surroundings.

Because of the encapsulation of the electronic module in the housing and the extensive shielding of the electronic module from the surroundings, a device with such an electronic module can further be used in a potentially explosive environment, since any heating of the electronics, or a voltage spark within the electronics that can arise due to equipment defects, remains limited to the electronic module itself. In particular, impermissible heating of the outer surface of the housing is avoided.

In a probe that is used for the direct scanning of the scale graduation, however, a comparable shielding is usually not possible, since the probe is to be brought into operative connection with the scale graduation. Accordingly, the probe cannot be completely shielded

from the surroundings and the probe is, thus, usually surrounded only by a simple protective coating. Therefore, in potentially explosive surroundings, additional devices are provided for limiting the current supplied to the probe to prevent the probe from being heated by the increased uptake of current to a temperature due to equipment defects, which cannot be tolerated in a potentially explosive environment. In particular, external Z diodes or external amperage limiting devices are used for limiting the voltage or the current.

SUMMARY OF THE INVENTION

It is an object of the invention to create a simple and cost-effective scanning device that is useable in a potentially explosive environment.

Pursuant to the invention, the above objective is accomplished by providing a scanning device for a position measuring system for scanning a scale graduation comprising a probe connected with the scale graduation and supplied with electric power over a plurality of electrical connections; an electronic module being electrically coupled to the probe; a housing for shielding the electronic module from the surroundings; and means for limiting the supply of current to the probe, wherein at least one fuse is provided in the electrical connections, leading to the probe, within the housing, for interrupting the flow of current to the probe when the temperature produced as a result of the current flow exceeds a specific value, and wherein the housing of the electronic module further forms the housing for the fuse.

In accordance with the invention, the electrical connections leading to the probe of the scanning device have at least one fuse within the housing of the electronic module. This fuse interrupts the flow of current to the probe, when the temperature, produced in the fuse as a result of the current flowing, exceeds a specified value, the housing of the electronic module at the same time forming the housing of the fuse to shield the module from the environment.

The invention is based on the realization that, because of the shielding of the electronic module from the environment by a housing, the heating of the electrical components within the housing does not result in the danger of an explosion and that therefore fuses, which do not have their own housing, can be used within the housing to interrupt the current. The housing of the electronic module therefore assumes the double function, on the one hand, of shielding the electronic module from the (potentially explosive) surroundings and, on the other, of serving as (the only) housing for at least one fuse, with which the current, supplied to the probe of the scanning device, is interrupted when excessively high.

The inventive solution makes a very simple and cost-effective interruption of the current to the probe of the scanning device possible, in that a melting section, which melts when the amperage in this section exceeds a certain maximum value, is provided in the electrical connections supplying the probe. This melting section can be formed, for example, by a section of the electrical connection having a smaller cross section. The region of reduced cross section has the largest current density or the greatest ohmic resistance within the electrical connections. If the current increases suddenly, for example, because of a defect in the equipment, the highest temperatures also arise within the electrical connections. Therefore, in the event of an intolerable increase in current and in the heating of the electrical connections associated therewith, melting takes place selectively at these sites of reduced cross-section, which consequently act like a fuse.

Alternatively, the fuse can also be formed, for example, by a section of the electrical connections from a material, which has a lower melting point or a higher specific resistance than do the remaining parts of the electrical connections.

In a preferred embodiment of the invention, the electrical connections of the probe are provided in the housing of the electronic module, and the fuse is disposed directly behind these connections, that is, between the connections and the probe, but still within the housing.

The housing of the electronic module preferably consists of aluminum.

In principle, the present invention can be used with all scanning devices, in which electrical current is supplied to a probe for scanning a scale graduation, irrespective of whether the scanning device works according to the inductive, the magnetic or the photoelectric principle.

BRIEF DESCRIPTION OF THE DRAWINGS

Further advantages of the invention will become clear with reference to the following description of the Figures, in which

Figure 1 shows a section of an angle measuring system, in accordance with the invention, comprising a scale graduation and a scanning device that are fastened to one of two mutually rotatable machine parts,

Figure 2a shows a side view of the measuring system of Figure 1,

Figure 2b shows a plan view of the probe of the measuring system of Figure 2a,

Figure 2c shows the circuitry of the electrical components of the measuring system of Figure 2a and

Figure 3 shows a portion of the scanning device of the angle measuring system of Figure 1, which has fuses.

DETAILED DESCRIPTION OF THE DRAWINGS

Figure 1 shows a cross section through an angle measuring system comprising a scale graduation 4 mounted on a graduation drum 40 and a scanning device 1 for scanning the scale graduation 4. The scanning device 1 and the graduation drum 40 that is provided with the scale graduation 4, are assigned to two mutually rotatable machine parts 6, 7. The graduation drum 40 is fastened by a connection 9 to a drive shaft 7 and the scanning device 1 is fastened over a further bolted connection 8 to a seat 6 of the drive shaft 7.

In practice, the scanning, of the scale graduation 4, by the scanning device 1 to determine the angle of rotation of the shaft 7 relative to the seat 6 can be carried out according to different physical principles; especially, inductive, magnetic and photoelectric principles of measurement. Independent of the principle of measurement employed, the scanning of the scale graduation 4 takes place by a probe 2, of the scanning device 1, which contactlessly interacts with the scale graduation 4 over electrical, magnetic or optical signals. Based on such interactions, the probe 2 produces an electrical output signal that represents the extent of rotation of the shaft 7 relative to the stationary seat 6. The electric output signal is evaluated in an electronic module 3, of the scanning device 1, which is enclosed by a housing 30, comprising for example, aluminum, being produced in a direct casting method and being assigned to the probe 2.

A magnetic principle of measurement for scanning the scale graduation 4 is shown by means of Figures 2a to 2c. It is a question here of a magnetoresistive measuring

method, which is based on the effect that the electrical resistance of some alloys, especially of iron-nickel alloys, depends on the magnetic field strength.

This measurement principle is illustrated in Figures 2a to 2c by a length-measuring system. This principle; however, can readily be transferred to the angle measuring system shown in Figure 1. Instead of an extended measuring rule, it is necessary to provide the corresponding ring-shaped scale graduation on the graduation drum 40 of Figure 1 and to construct and geometrically dispose the associated probe such that the probe is suitable for scanning a ring-shaped scale graduation.

According to the side view of Figure 2a, a scale graduation 4 is formed by a permanent magnet measuring rule with a periodic sequence of magnetic north and south poles 41, 42 of the same extent, the extent of the individual north and south poles 41, 42 corresponding to the period P of the arrangement or the scanned signals. The magnetoresistive probe 2, intended for scanning this scale graduation 4, has a strip conductor microstructure 25, which is mounted on a support 20, such as a small glass plate, and which comprises a plurality of strips 21 to 24 and 21' to 24' of a magnetoresistive material. Alternatively, other magnetic field detectors, such as a Hall element, can also be used.

As can be seen from Figure 2a and the plan view of the strip conductor microstructure 25 of Figure 2b, the strip conductor microstructure 25 comprises a plurality of strip conductors 21 to 24 and 21' to 24', which are disposed next to one another and are in the form of strips of a magnetoresistive material, the width b of which (extent in the measuring direction M) is considerably greater than the thickness d, the thickness being, for example, 0.05 micrometers and the width b being 25 micrometers. These strip conductors 21 to 24 and 21' to 24' are divided into two groups, one (comprising the strip conductors 21 to 24) extends from a

first, left edge of the small glass plate 20 to its center, while the other (comprising the strip conductors 21' to 24') extends from the other, right edge of the small glass plate 20 to the center of this plate.

Within one group, the strip conductors 21 to 24 and 21' to 24' are each connected together such that each fifth strip conductor is connected in series, wherein in each group of strip conductors 21 to 24 and 21' to 24' four connections in series are formed. Moreover, the strip conductors 21 to 24 and 21' to 24' are disposed periodically next to one another with a period p' being equal to one-quarter of the period P of the scanned signal. By such an arrangement, phase positions of the magnetic field strength of the scale graduation 4, which are offset by 90°, can be determined.

The individual strip conductors 21 to 24 and 21' to 24' are each connected together by copper conductors 10, which are not magnetically sensitive and are constructed as strip conductors. The copper conductors 10 are insulated from one another at their crossing points.

Optionally, it is possible to shield the whole surface of the probe 2 that is outside of the housing 30 by a coating or sheathing. The magnetic field strength must not be affected significantly by the coating or sheathing. Furthermore, the sheathing must be very thin, since the distance between the probe and the scale graduation is not to be increased. If the sheathing is carried out with an electrically conductive material, the probe must additionally be insulated from the electrical connections. On the basis of these stipulations, it is evident that sheathing the probe is an improved but by no means an adequate protection for use in a potentially explosive environment.

As can be seen from the equivalent circuits of Figure 2c, the magnetoresistive conductor strips of the circuit arrangement shown in Figure 2b are connected to form two Wheatstone bridges. At the inputs of each of the bridges there is a voltage of 2U and at the outputs there is a voltage S_1 or S_2.

Referring to Figures 2a to 2c, the function of the magnetoresistive scanning method will now be explained on the basis of the relative position of the probe 2 with respect to the scale graduation 4 shown in Figure 2a.

In the position of the scale graduation 4 relative to the probe 2, shown in Figure 2a, magnetic field lines F pass maximally in the measuring direction M (that is, perpendicular to the current direction S) through those strip conductors 21, 21', which are precisely between the north and south poles 41, 42 of the scale graduation 4. By this arrangement, the ohmic resistance of these strip conductors is reduced by a few percent.

On the other hand, when the field lines pass perpendicularly to the plane E of the strip conductor microstructure 25, in the direction of their least extent, through those strip conductors 23, 23', which are precisely opposite the north and south poles 41, 42, the ohmic resistance is not noticeably changed.

Corresponding considerations apply for the strip conductors 22, 22', 24, 24' of the strip conductor microstructure 25 which, in relation to the north and south poles 41, 42 of the scale graduation 4, are in those positions which, with respect to the positions of the strip conductors 21, 21', 23, 23' mentioned above, are each shifted by a quarter period P of the scale graduation 4.

In the case of a movement of the scale graduation 4 relative to the probe 2, sinusoidal voltages S_1 or S_2, the phase of which are shifted relative to one another each by a

quarter period, arise at the outputs of the bridge circuits. The two signals are supplied to interpolation electronics within an electronic module (see electronic module 3 in Figure 1), in which the measurement steps are determined by interpolation. For further details of this known method, reference is made to the "Digitale Längen- und Winkelmeßtechnik" (Digital Length and Angle Measuring Technique) of A. Ernst, 3rd edition, 1998, especially to pages 14 ff and to pages 80 ff.

In Figure 3, a magnetoresistive probe 2 is shown in the concrete configuration, in which it can be used in an angle measuring system of Figure 1.

The probe 2 comprises a first conductor strip microstructure 26, which is used to detect a reference pulse, and a second conductor strip microstructure, 25 with a plurality of magnetoresistive conductor strips, which are intended to scan an incremental graduation. The magnetoresistive conductor strips are connected with one another over connecting leads 10 in the form of copper conductor strips, on the one hand, and, on the other hand, with electrical connections 13, which serve as inputs and outputs for the probe 2.

The electrical connections 13 are disposed within the housing 30 of an electronic module, of which only the surface 31 of the housing is shown in Figure 3. At the same time, the housing serves as a thermal shield from the medium, surrounding the housing, and as a material shield. If, for example, the arrangement is in an explosive gas mixture, then the housing must be gas-tight and thermally insulating.

Between the electrical connections 13 and the conductor strip microstructure 25 and within the housing 30, the copper conductors, forming the electrical connecting leads 10, each have a section 12, in which the cross section is constricted. These cross-sectional constrictions 12 form the fuses 11, since the current density or the ohmic resistance within the

connecting leads 10 are highest in the region of the cross-sectional constrictions 12. As a result, when there is increased current flow, the cross-sectional constrictions 12 heat up more than the remaining sections of the connecting leads 10.

If the amperage increases greatly in the connecting leads 10 because of a defect in the device or for some other reason, the highest temperatures, produced by the amperage, are developed in the region of the cross-sectional constrictions 12. If this temperature exceeds the melting point of the material, the corresponding connecting lead 10 melts at the cross-sectional constriction 12 and the current flowing to the conductor strip microstructure 25 of the probe 2 is interrupted. By this arrangements, those parts of the scanning device, especially the conductor strip microstructure 25 of the probe 2, which are disposed outside of the housing 30 and therefore not shielded thermally from the surroundings, avoid being heated excessively by an unanticipated increase in current. In particular, arcing between the individual leads is avoided. This also makes it possible to use the probe 2 in potentially explosive surroundings.

Fuses in the form of cross-sectional constrictions 12 can be provided, in a few selective connecting leads 10, especially, in the voltage-supplying leads. Preferably, however, the cross-sectional constrictions 12 are provided in all connecting leads 10, which partially extend outside of the housing 30. This arrangement ensures that the connecting leads 10 do not heat up to an impermissibly high temperature even in a short circuit with an external power supply.

What is claimed as new and desired to be protected by letters patent is set forth in the appended claims.

CLAIMS

WHAT IS CLAIMED IS:

1. A scanning device for a position measuring system for scanning a scale graduation comprising:

a probe being operatively connected with the scale graduation and being supplied with electric power over a plurality of electrical connections;

an electronic module being electrically coupled to the probe;

a housing of the electronic module for shielding the electronic module from the surroundings; and

means for limiting the supply of current to the probe, wherein at least one fuse is provided in the electrical connections, leading to the probe, within the housing, for interrupting the flow of current to the probe when the temperature produced as a result of the current flow exceeds a specific value, and wherein the housing of the electronic module further forms the housing of the at least one fuse.

2. The scanning device of claim 1, wherein the fuse is formed by a sectional constriction of a cross section of the electrical connections.

3. The scanning device of claim 1, wherein the fuse is formed by a section of the electrical connections having an electrically conductive material of at least one of a lower melting point and a higher specific resistance.

4. The scanning device of claim 1, wherein the fuse is disposed behind the electric connections that are between the probe and the electronic module and within the housing.

5. The scanning device of claim 1, wherein a fuse is provided for each of the electrical connections extending partially outside of the housing.

6. The scanning device of claim 1, wherein the electrical connections comprise conductor strips.

7. The scanning device of claim 1, wherein the housing comprises aluminum.

8. The scanning device of claim 1, wherein the probe scans the scale graduation according to at least one of the inductive principle of measurement, the magnetic principle of measurement and the photoelectric principle of measurement.

9. The scanning device of claim 8, wherein the probe is a magnetoresistive probe.

ABSTRACT OF THE DISCLOSURE

The invention relates to a scanning device for a position measuring system for scanning a scale graduation with a probe, which can be brought into operative connection with the scale graduation and is supplied with electric power over electrical connections; an electronic module, which is coupled over electric connections to the probe; a housing for the electronic module for thermally shielding the electronic module from the surroundings; and means for limiting the supply of current to the probe. Pursuant to the invention, the electrical connections, leading to the probe, within the housing of the electronic module, have at least one fuse, which interrupts the flow of current to the probe when the temperature produced as a result of the current flow exceeds a specifiable value. The housing the electronic module forms the housing of the fuse.

DOCKET ALARM

Fig. 1

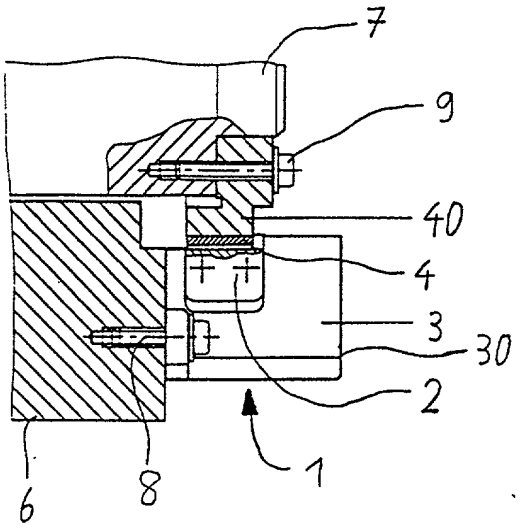


Fig. 2a

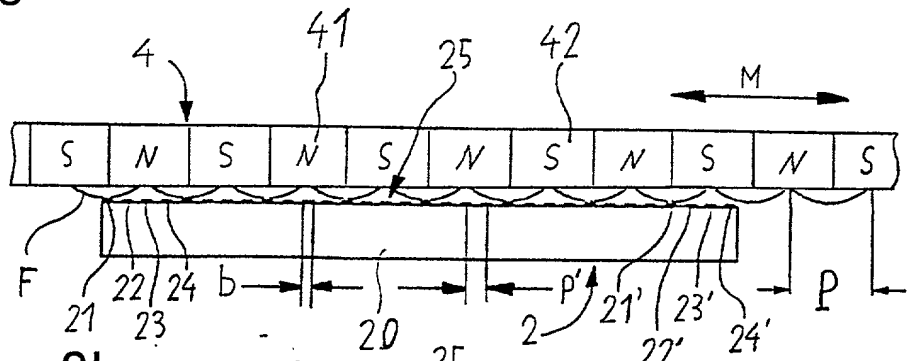


Fig. 2b

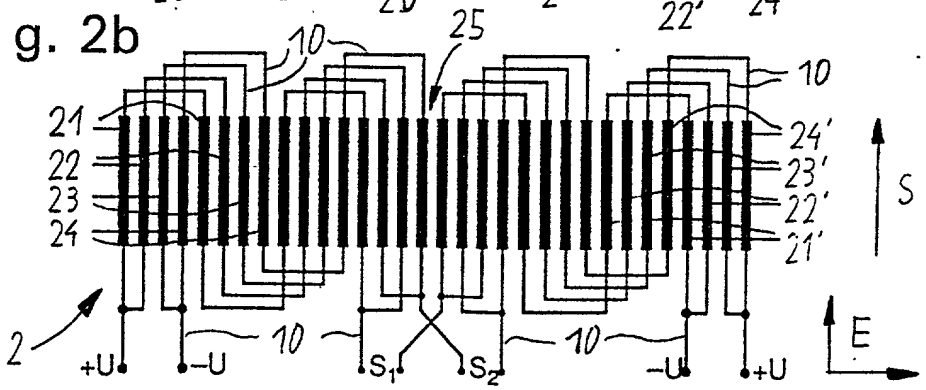


Fig. 2c

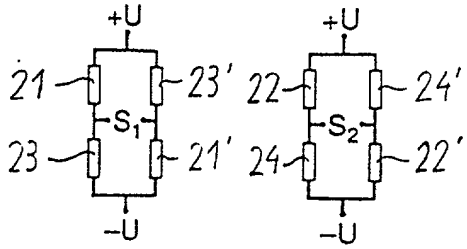
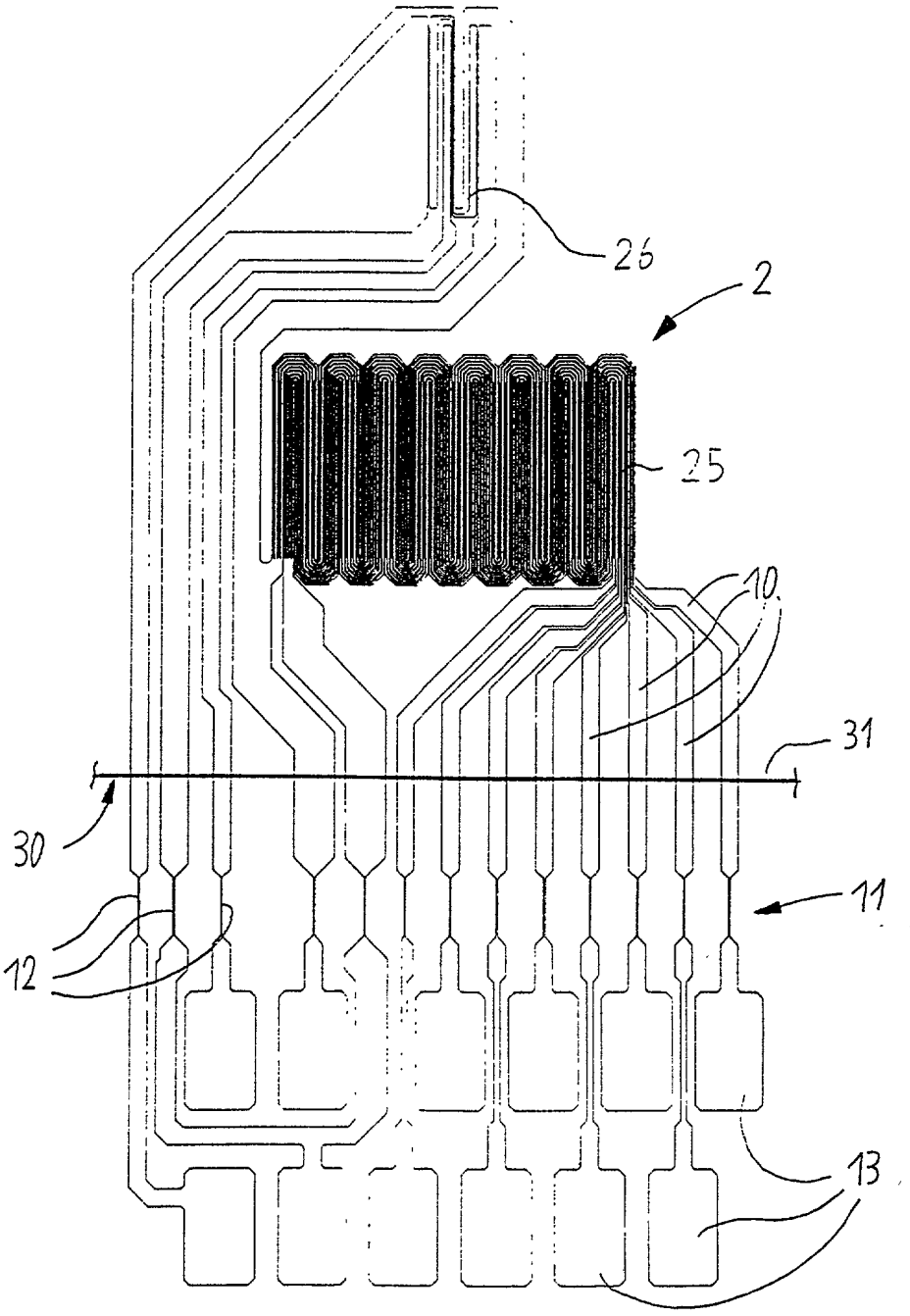


Fig. 3



Docket No.: DT-3645

Declaration and Power of Attorney for Patent Application
Erklärung Für Patentanmeldungen Mit Vollmacht
German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und allemige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

Abtasteinrichtung für Positionsmeßsysteme zur Abtastung einer Messteilung

deren Beschreibung
(zutreffendes ankreuzen)

[x] hier beigefügt ist.

[ ] am ________ unter der Anmeldungsseiennummer _______ eingereicht wurde und am ________________________ abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

A SCANNING DEVICE FOR A POSITION-MEASURING SYSTEM FOR SCANNING A SCALE GRADUATION

the specification of which
(check one)

[X] is attached hereto.

[ ] was filed on ________________________
Application Serial No. ______________
and was amended on ________________________
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

NYLIB1/749738

German Language Declaration

Prior foreign applications Prioritaet beansprucht		Priority Claimed		
199 57 822.2 (Number) (Nummer)	Germany (Country) (Land)	19 November 1999 Day/Month/Year Filed) (Tag/Monat/Jahr eingereicht	[X] Yes Ja	[ ] No Nein
(Number) (Nummer)	(Country) (Land)	(Day/Month/Year Filed) (Tag/Monat/Jahr eingereicht	[ ] Yes Ja	[ ] No Nein
(Number) (Nummer)	(Country) (Land)	(Day/Month/Year Filed) (Tag/Monat/Jahr eingereicht	[ ] Yes Ja	[ ] No Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 112 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.) (Anmeldeseriennumer)	(Filing Date) (Anmeldedatum)	(Status) (patentiert, anhängig, aufgegeben)	(Status) (patented, pending, abandoned)
(Application Serial No.) (Anmeldeseriennumer)	(Filing Date) (Anmeldedatum)	(Status) (patentiert, anhängig, aufgegeben)	(Status) (patented, pending, abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden koennen, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statement and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

VERTRETUNGSVOLLMACHT: Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent-und Warenzeichenamt:

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

David Toren	Reg. No. 19,468
Alexander Zinchuk	Reg. No. 30,541
Ronit Gillon	Reg. No. 39,202

Telefongespräche bitte richten an:

Direct Telephone Calls to:

David Toren
BROWN & WOOD LLP
(212) 839-5300

Postanschrift:

Send Correspondence To:

David Toren
BROWN & WOOD LLP
One World Trade Center
New York, New York 10048-0557

Unterschrift des Erfinders **Datum**

Voller Name des einzigen oder ursprünglichen Erfinders:

Peter Fischer
Wohnsitz
Bernau
Deutschland
Staatsangehörigkeit
deutsch
Postanschrift
Hafenstein 2
D-83233 Bernau
Deutschland

Inventor's Signature **Date**
Peter Fischer 10/16/2000
Full name of the first or sole inventor

Peter Fischer
Residence
Bernau
Germany
Citizenship
German
Post Office Address
Hafenstein 2
D-83233 Bernau
Germany

Unterschrift des Erfinders **Datum**

Voller Name des zweiten Miterfinders

Wohnsitz

Staatsangerhörigkeit

Postanschrift

Inventor's Signature **Date**

Full name of the second joint inventor, if any

Residence

Citizenship

Post Office Address